Homework 2

CMSY-199, Fall 2013

Upload your solution to the Canvas course website as a zip archive file prior to the start of class on Monday, September 23.

1. Create a Java class called `MayanDate` which *has*:

   (a) five `int` type instance variables - `baktun`, `katun`, `tun`, `winal`, and `kin`

   (b) `get` and `set` methods for each instance variable which ensure the values being set are valid according to the following table:

Variable	**Range**
baktun	0 to 19
katun	0 to 19
tun	0 to 19
winal	0 to 17
kin	0 to 19

   (c) a constructor which initializes all five instance variables

   (d) an `equals` method which takes an `Object` type as an argument and returns `true` if it is an `instanceof MayanDate` and the values of all five of its instance variables are equal to the current object's values

   (e) a `hashCode` method which returns an `int` value based on the following formula:

$$baktun \times 144,000 + katun \times 7,200 + tun \times 360 + winal \times 20 + kin$$

   (f) a constant of type `int` named `EPOCH_HASH_CODE` which has a value of $1,856,305$

   (g) a `toString` method which prints the `baktun`, `katun`, `tun`, `winal`, and `kin` separated by periods (e.g., 12.17.16.7.5)

2. Create a Java application called `MayanDateTest` which will serve as a *driver class* to test the functionality of the `MayanDate` class. Write enough test cases in the `main` method to demonstrate that your `MayanDate` class is working properly.